

Patent: 395040

Patent Abstract:

The invention provides a metallization process of integrating tungsten plug and copper interconnect, which uses selective tungsten deposit to form the tungsten plug in the contact layer and form copper interconnect in application of the dual damascene structure. The process includes the steps of:

(a) providing a semiconductor substrate covered with a dielectric layer; (b) forming the dual damascene structure including the interconnect trench and contact, which is exposed to the surface of the semiconductor substrate; (c) forming a tungsten plug in the contact using selective tungsten deposition method; (d) forming a barrier layer on the interconnect trench and the tungsten plug; and (e) forming a copper metal layer on the barrier layer, and filling up the interconnect trench.